Welcome

JPL's Precise Process for Evaluation & Selection of Engineering Software Management Tools

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About the Speaker

Frank Dowens

Frank's career started 30 years ago as a mainframe computer operator. He advanced into technical project management where he built inter-library loan databases. In 1996 he moved to NASA's Jet Propulsion Laboratory initially as a contractor and then after 5 years a permanent employee.

Frank has advanced over the years to his current position of Enterprise Applications Software Engineer where he performs web development, SQL programming, systems engineering and IT projects.

This Presentation

- This presentation is a informal recap of what happened when JPL reviewed, evaluated and selected a software utilization reporting vendor, as it happened

- JPL does not endorse specific vendors as policy

Agenda

- Goals for the study
- Vendor review: pros
- The scoring process
- Scoring results
- Results of the Study
- Questions

Terms

- Vendors: Companies that provide utilization reporting solutions
- Products: Software to be tracked and reported

Goals for the Study

Study: Goals

- To increase the quality of utilization data
- To increase the confidence of stakeholders in reporting data
- To increase the quantity of pre-generated reports
- Compare our existing in-house created software to Vendor software
- Deliver a 'Build vs Buy' report

Study: Requirements gathering

- Requirements were collected from cross role members of the tool utilization stakeholders
  - Managers
  - License Installation and Management staff
  - Product Support leads
  - Discipline leads

Study: Revealed Needed Features

- Can support a significant number of Products that we offer
- Can import Vendor non-supported data
- Ability to create personalized reports
- Schedule report generation and delivery
- Connect customer log-in names to HR information
- Use HR data in personalized reports
- Robust denials reporting
- Real-time information

Study: Actions

- Gathered and prioritized high level requirements

- Identified Vendors and sent them our requirements

- Met with Vendors to discuss our requirements

- Installed Vendors' pilot software

- Evaluated and Scored Vendors against our requirements

- Presented the Build vs Buy recommendation
  - Vendor evaluations
  - Build vs Buy study result

Vendor 'Pros'

Vendor Pros: Vendor-A

- Vendor-A has a clean and modern interface
- Supports a robust list of license servers
- Has good online documentation
- Shows real-time denials for tools using LM-X license manager
- Can import un-supported tool usage for reporting using XML
- Can 'drill down' from the dashboard homepage to tool details
- This vendor views the data from the server perspective

Vendor Pros: Vendor-B

- Vendor-B is a lean product. It 'gets the job done' without a lot of 'bells and whistles'

- The interface is simple and provides all the basic information and reports

- Supports: Sentinel, Reprise, LUM, DSLS, LM-X, and Altium.

- Filtered denials reporting

Vendor Pros: Vendor-C

- Well designed user interface
- Robust reports can be run via the web or in MS Excel with auto update on demand
- Customizable dashboards (Per product or report type via widgets)
- User logins via LDAP allows for personalized start page and dashboards per user
- Locally stored LDAP data
- Supports a robust list of license servers
- Definable Role groups controlled via LDAP
- Psuedo-Vendors capable (AKA Combined)
- Uses a COTS reporting engine (OLAP Cubes)
- Filtered denials
- Imports unsupported Products through Flexlm styled reports

The Scoring Process

Scoring: Rank and weight

- Each requirement was assigned a numeric weight on a scale from 2 – 10 where:
- 2 - would like to have
- 4 – Somewhat Important
- 6 – Very important
- 8 – High importance
- 10 – Must have

Scoring: Grading

- Each Vendor was given a score for each requirement on a scale from 0 -3 where:

- 0 - Did not meet the requirement

- 1 - Somewhat met the requirement

- 2 - Met the requirement

- 3 - Met the requirement plus provided extra value

- Weight (x) Score = Grade

- Example: (Weight) 10 x (Met) 2 = (Grade) 20
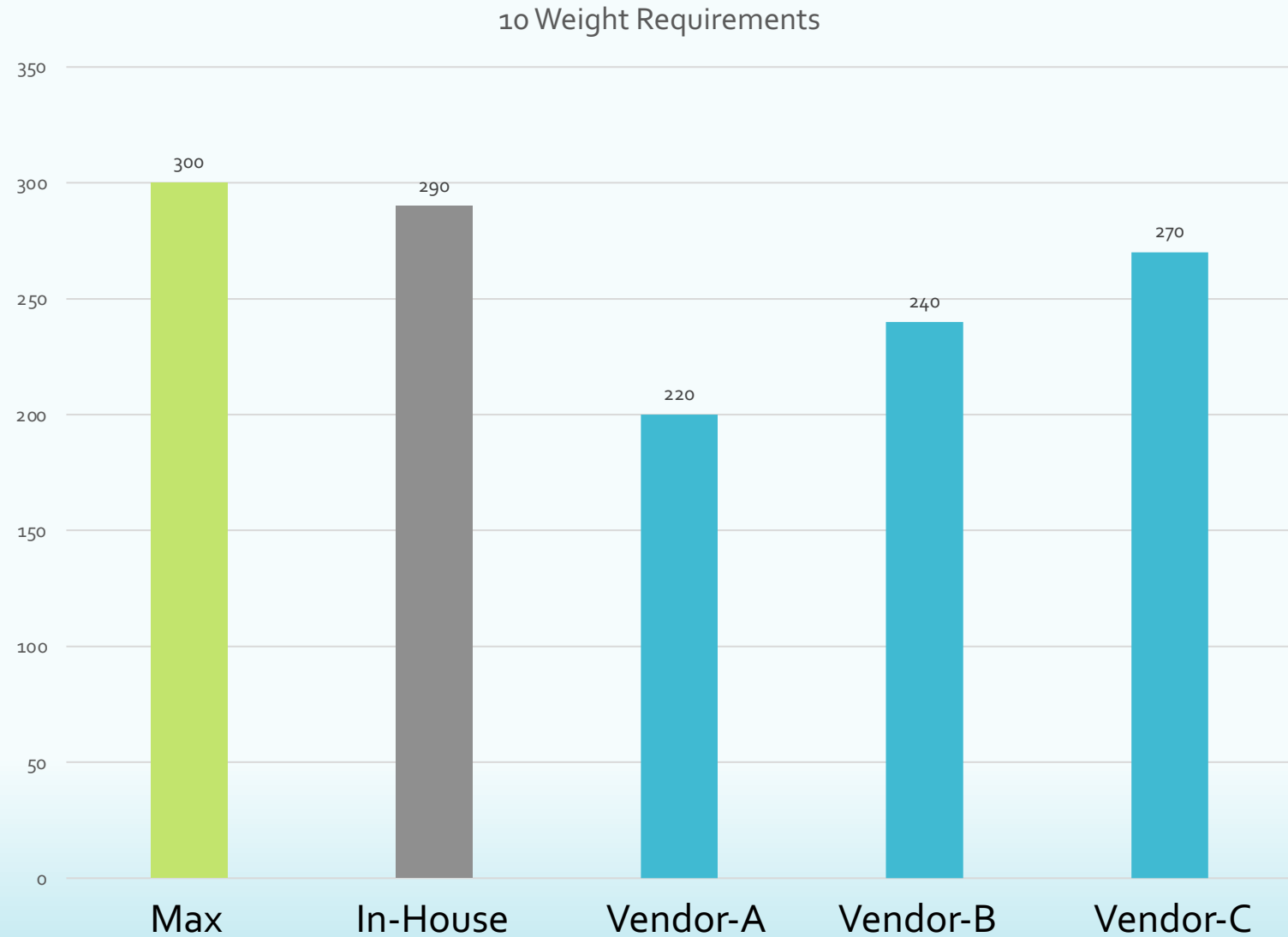
Scoring: Document Example

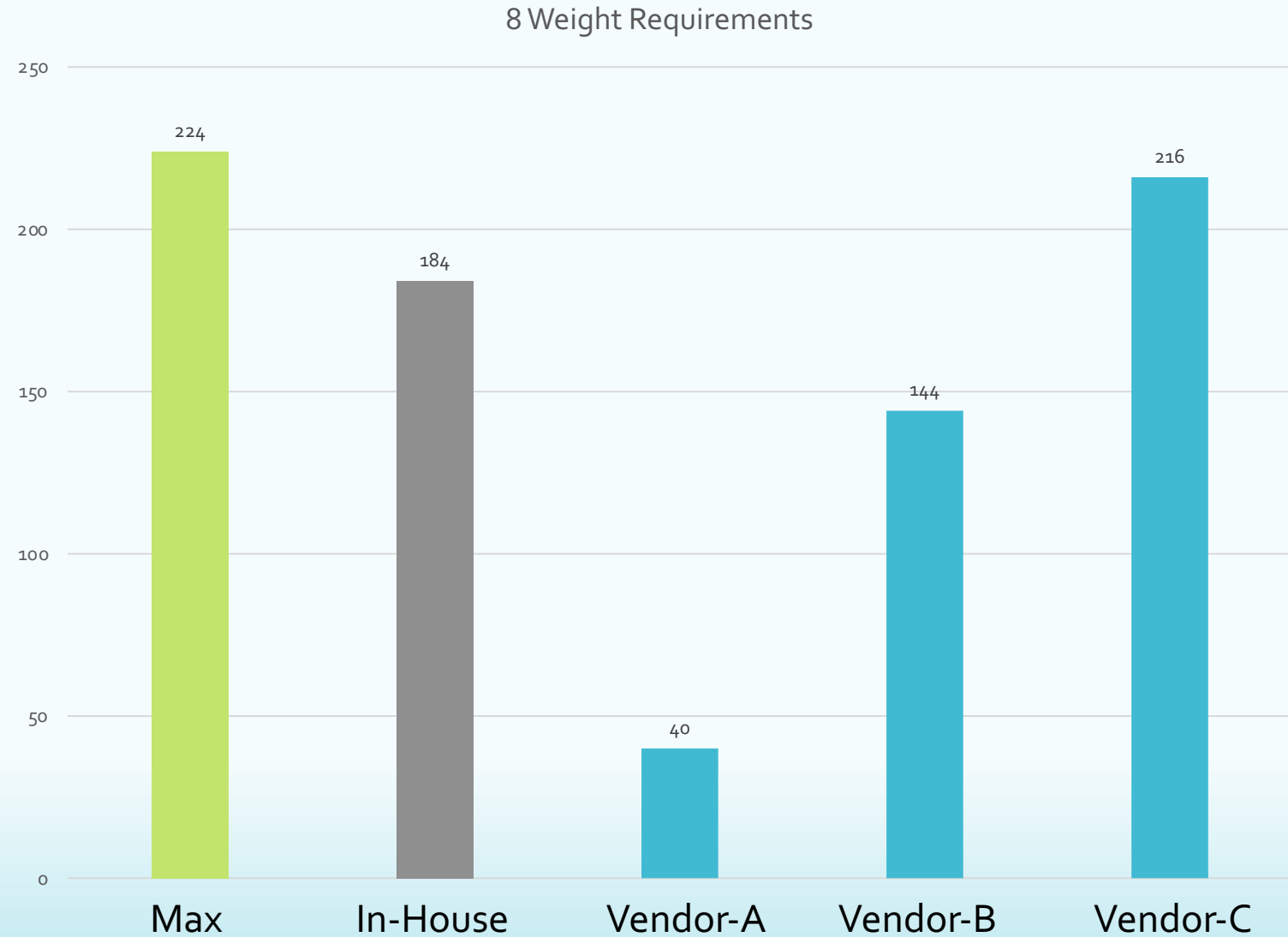|		Weight	Max	Grade	Vendor Comments
TUR-36	The Vendor shall provide a method to produce custom utilization reports	6	12	12	In-House tool meets this requirement through custom programming by the development staff
				6	Vendor A does not meet this requirement. The sales staff claims they do not meet this requirement however our technical support thinks this requirement can be met through Vendor As SQL gui
				6	Vendor B partially meets this requirement by allowing read access to the database through SQL Server Manager. However our team would have to learn the Vendor B database schema and then write custom queries using SqlManager
				12	Vendor C has multiple flexible ways of creating custom reports. Reports can be created through the Analysis Web Console the License Monitor Dashboards the Excel Dashboards and Reporting Services.

Requirements Score Matrix

Green = Meets Req
Yellow = Somewhat Meets Req
Red = Does not meet Req

Number	Summary	Weight	In-House	Vendor-A	Vendor-B	Vendor-C
TUR-1	Report Usage Over TimePer Feature	10				
TUR-2	Usage over time for quick checkout features	10		Yellow		Yellow
TUR-3	Display the feature license count line on UOT reports	10				
TUR-4	License count over time overlay on the UOT report changes as licenses change	10				
TUR-5	Abiliy to change the display name of a feature	10				
TUR-6	Real Time checked out features	10				
TUR-7	Report Denials Over Time Per Feature	10				
TUR-8	Report Denials Over Time Per Feature for proprietary logs	10		Red	Red	
TUR-9	Spurious Denials Elimination	10		Red	Yellow	
TUR-10	Show Unique Users Over Time	10			Yellow	

Grade:
10 Weight Requirements

10 Weight Requirements

Grade:
8 Weight Requirements

8 Weight Requirements

	Max	In-House	Vendor-A	Vendor-B	Vendor-C
Value	224	184	40	144	216

Grade: 6 Weight Requirements

6 Weight Requirements

Max	132
In-House	84
Vendor-A	78
Vendor-B	30
Vendor-C	66

Final Score

Requirements Heat Map
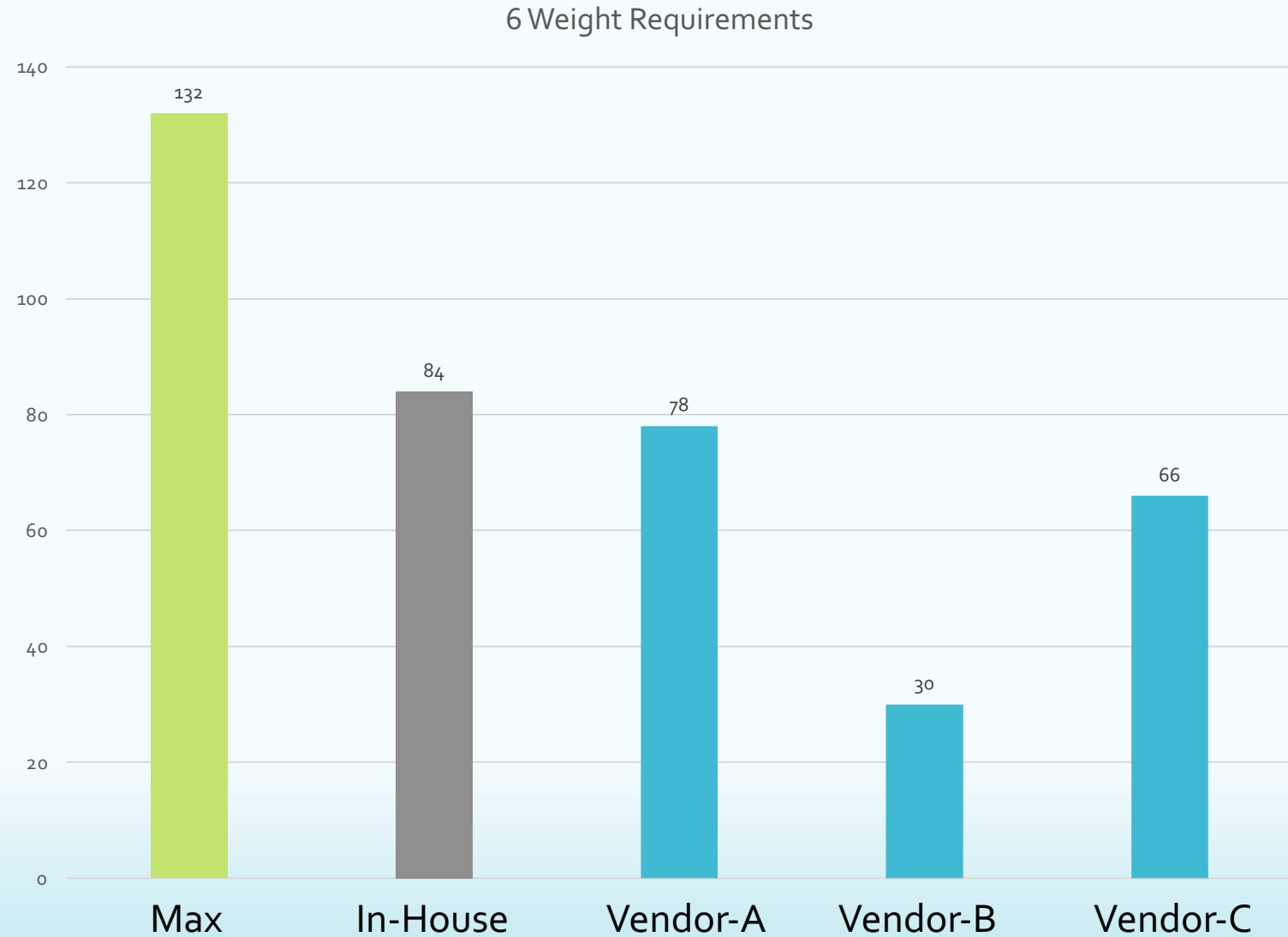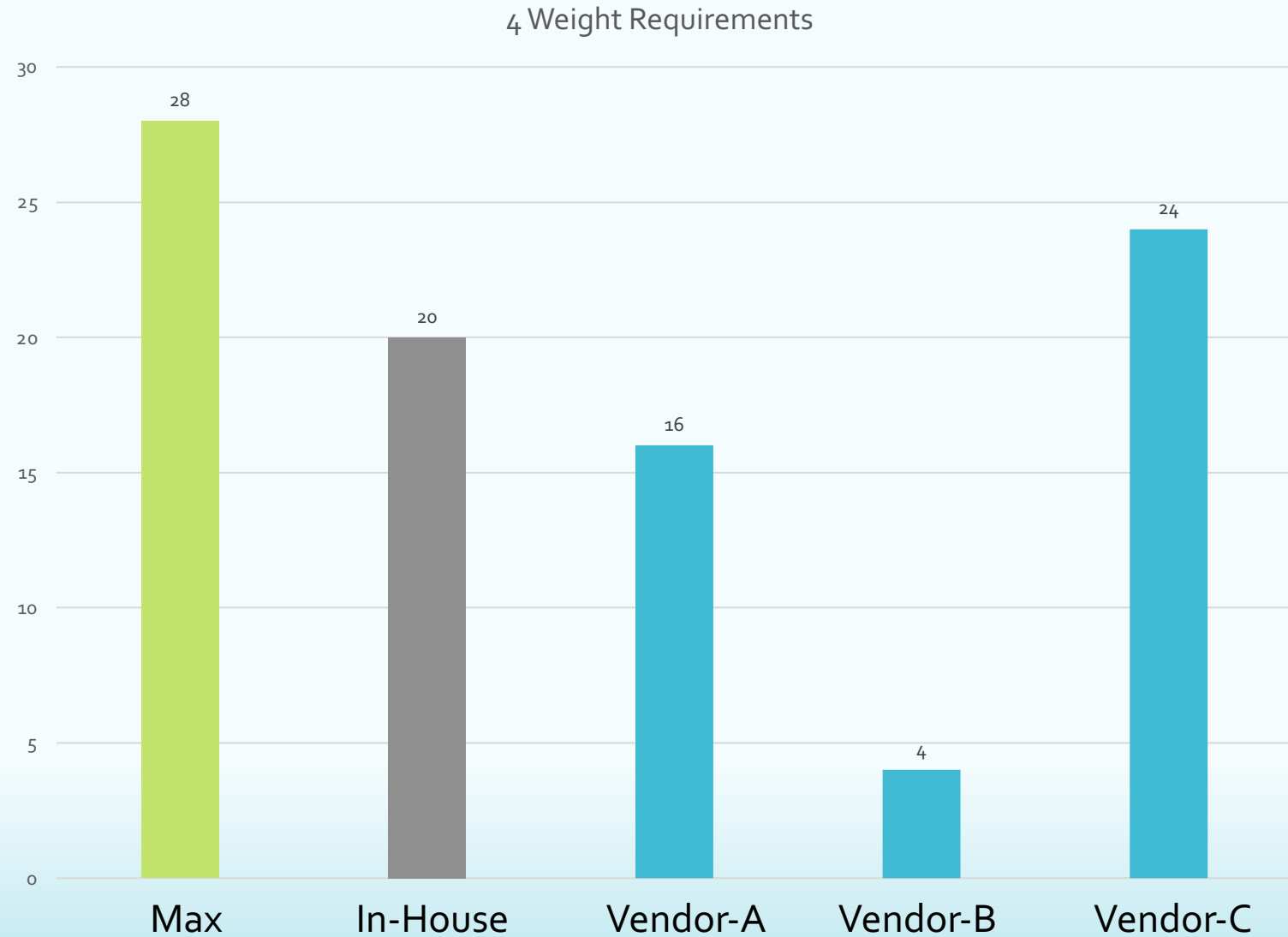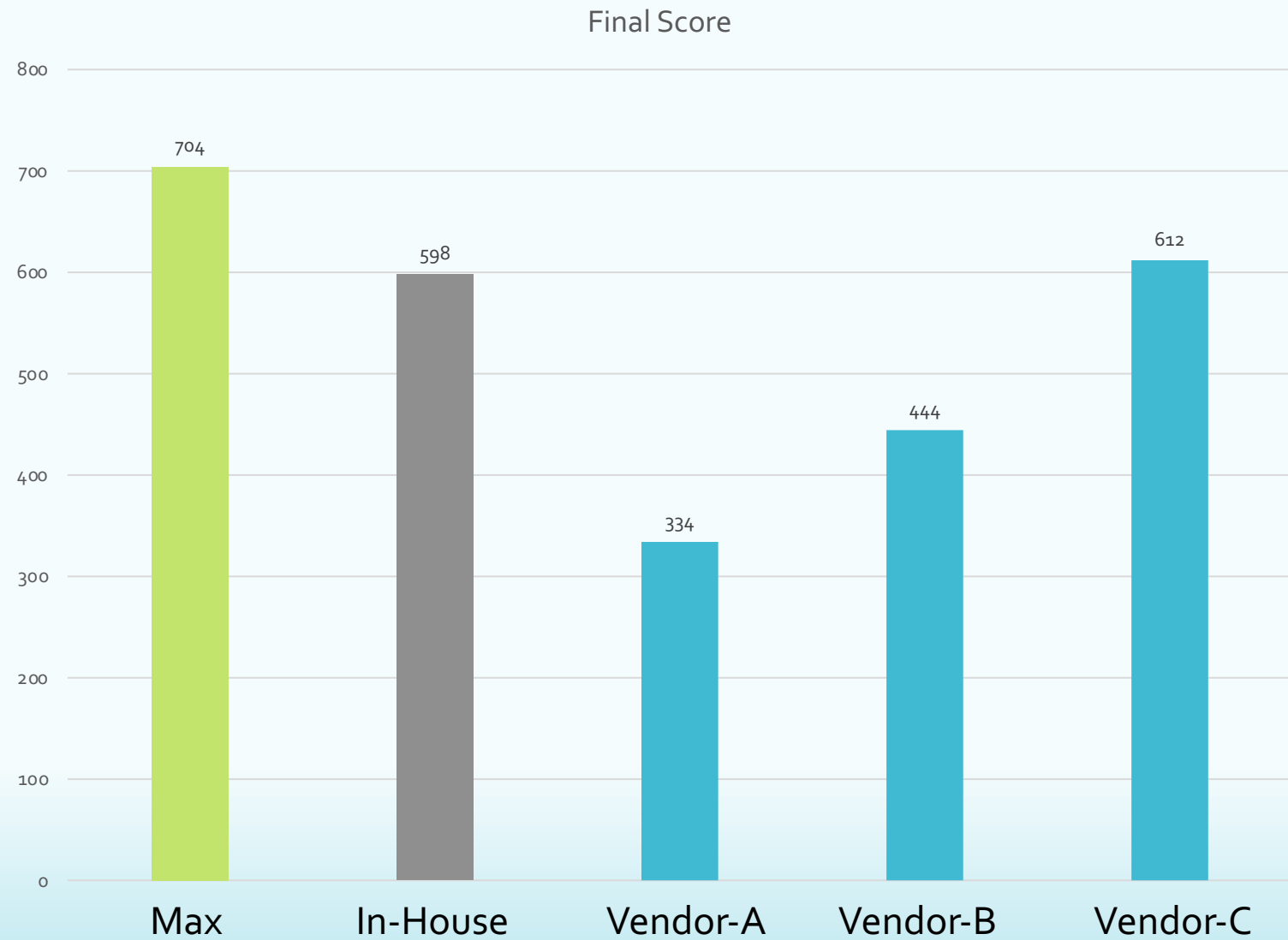
Ordered by requirement
weight 10 on top 2 on bottom

Blue = Exceeds Req
Green = Meets Req
Yellow = Somewhat Meets Req
Red = Does not meet Req
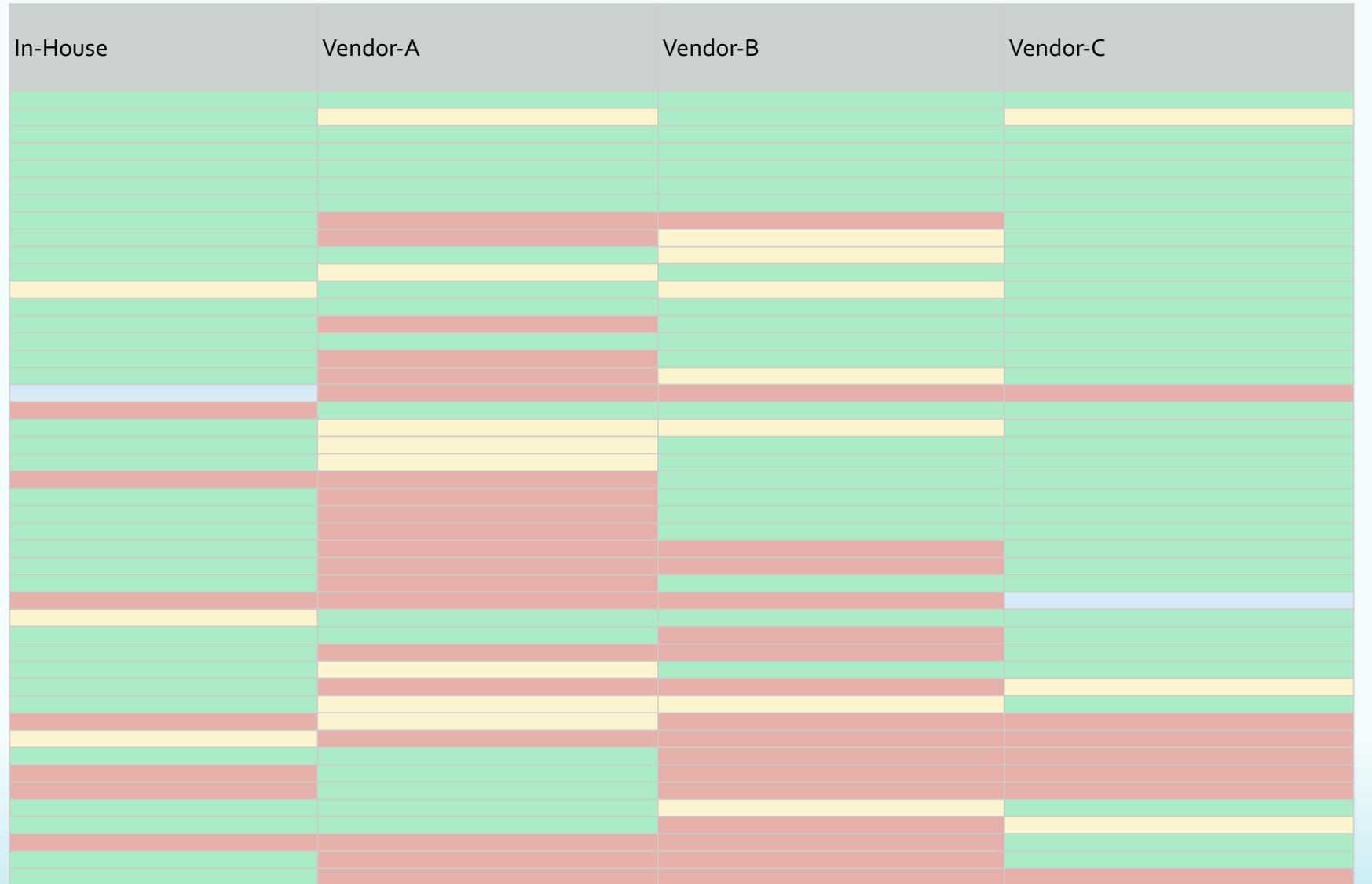
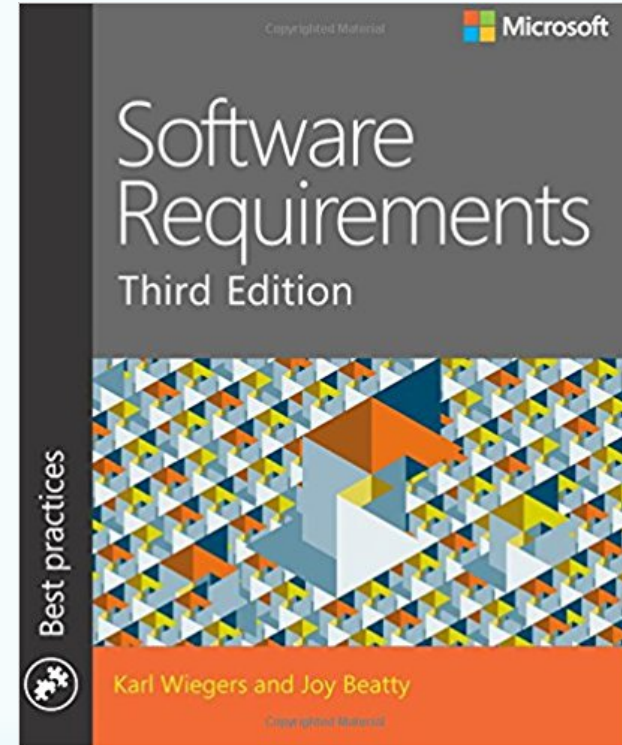| In-House	Vendor-A	Vendor-B	Vendor-C

Score Vs Cost

Conclusion of Study

- Vendor C has more features per investment dollar than either an in-house build or the other candidate vendors

- Vendor C has features that were not represented in the requirement set

- We can not justify the build solution on a cost per feature basis

Initial Results of the Install

- We just finished phase one implementation
- We are currently running In-house and Vendor C in parallel

Reference

- **Software Requirements (3rd Edition) (Developer Best Practices)**
- ISBN-10: 0735679665
- Chapter 22

Thank You

Questions